

**Notice of Allowability**

Application No.

10/673,444

Examiner

Quyen P. Leung

Applicant(s)

KONDO, TAKAYUKI

Art Unit

2874

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/4/2007.
2. ☒ The allowed claim(s) is/are 1 and 3-33.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

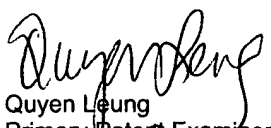
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

  
Quyen Leung  
Primary Patent Examiner  
Group Art Unit 2874

### EXAMINER'S AMENDMENT

In response to applicant's amendment filed 1/4/2007, claims 1, 3, 7, 9-15, 22-25, and 27-31 have been amended. Applicant's arguments filed on 1/4/2007 have been considered. Claims 1, 3-33 are pending and allowed.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Gang Luo on 3/2/2007.

The application has been amended as follows:

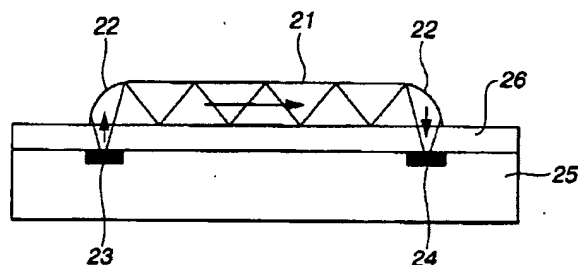
- Claim 24 line 4 "the micro tile element" has been changed to —at least one of the first and second elements—for proper antecedent basis.
- Claim 25 line 4 "the micro tile element" has been changed to —at least one of the first and second elements--, for proper antecedent basis.

The following is an examiner's statement of reasons for allowance:

The closest prior art, Sakata et al (6,868,214 and JP 2001-042150 A) illustrates an optical interconnection circuit and the method of making the circuit. In figure 2 comprising a substrate(25) on which a first element (23) and a second element (24) are formed and an optical waveguide (21) for transmitting an optical signal emitted from the first element (23) to the second element (24). Sakata et al does not anticipate or make

obvious applicant's claimed invention, because Sakata et al does not teach (1) the elements being bonded or fixed by an adhesive to the substrate and (2) the optical waveguide (21) contacting the part of the first element and the part of the second element. Sakata's figure 2 shows an intervening layer (26) between the waveguide (21) and the elements (23,24). Sakata's col. 5 lines 40-65 teaches that elements (23,24) are formed on the substrate (25):

**FIG.2**



FIGS. 2 and 3 respectively illustrate typical simple optical interconnection devices in which a waveguide 21 with end portions 22 formed on a cladded plate 26 is provided on a substrate 25 or 27. In the structure of FIG. 2, a light emitting device 23 and a light receiving device 24 are formed on a surface of the substrate 25, and this surface of the substrate 25 is bonded to the cladded plate 26 with positions of the devices 23 and 24 aligned with the respective end portions 22 of the waveguide 21. In the structure of FIG. 3, a light emitting device 23 and a light receiving device 24 are formed on a surface of the substrate 27, and the other surface of the substrate 27 is bonded to the cladded plate 26 with positions of the devices 23 and 24 aligned with the respective end portions 22 of the waveguide 21.

The end portion 12 or 22 has an approximately spherical profile, so that this profile acts as a concave mirror. Thereby, light emitted from the light emitting device 23 perpendicularly to the cladded plate 26 can readily couple to the waveguide 11 or 21 through the end portion 12 or 22, and light converged by the end portion 12 or 22 can readily couple to the light receiving device 24.


A waveguide of the present invention can be fabricated by using, as a mold for forming a waveguide, a substrate with a partial cylindrical recess formed by a method of fabricating a partial cylindrical structure.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quyen P. Leung whose telephone number is (571) 272-8188. The examiner can normally be reached on normally M-F, 6:15 am - 2:45 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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qpl